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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,019	08/20/2003	David P. Wieczorek	51252-5029-01	5187
7590	02/11/2008		EXAMINER	
Siemens Corporation Intellectual Property Department 170 Wood Avenue South Iselin, NJ 08830			KIM, CHRISTOPHER S	
			ART UNIT	PAPER NUMBER
			3752	
			MAIL DATE	DELIVERY MODE
			02/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/644,019	WIECZOREK ET AL.
	Examiner	Art Unit
	Christopher S. Kim	3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 January 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 6-9, 20, 22 and 24-29 is/are pending in the application.

4a) Of the above claim(s) 6-9, 28 and 29 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 20, 22 and 24-27 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

 1. Certified copies of the priority documents have been received.

 2. Certified copies of the priority documents have been received in Application No. _____.

 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 26, 2007 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Claims 6-9, 28 and 29 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention and/or Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 9, 2005.

Claim Rejections - 35 USC § 103

4. Claims 20, 22, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanasawa et al. (4,365,746).

Tanasawa discloses a method comprising:

providing a needle 6;

selecting a body 1 to surround needle 6 and form a body passage 7, 8, 9

that communicates with and surrounds substantially the entire needle (chamber 7
surrounds substantially the entire needle 360 degrees);

providing a seat 4;

configuring at least one cut-out (passage 8 below passage 9 and plug 15).

Tanasawa discloses the limitations of the claimed invention with the exception of the average cross sectional area of the body passage and the cross sectional area of the needle. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided an annulus outer diameter that is no less than 100% greater than the inner diameter and a body passage area less than 2.25 time the area of the needle in the device of Tanasawa to control fuel flow volume, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

5. Claims 20, 22, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (4,629,127) in view of Tanasawa et al. (4,365,746).

Kawamura discloses, in figure 2, a method comprising:

providing a needle 1;

selecting a body 7 to surround needle 1 and form a body passage (see fuel flow arrow lines) that communicates with and surrounds substantially the entire needle;

providing a seat (downstream side of chamber 5);
configuring at least one cut-out (outboard and below ports 6).

Kawamura discloses the limitations of the claimed invention with the exception of the armature and the average cross sectional area of the body passage and the cross sectional area of the needle.

Tanasawa discloses, as prior art, similar injection valves as shown in Kawamura's figures 8 and 9. Tanasawa teaches an armature 119. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided an armature to the injection valve of Kawamura as taught by Tanasawa for electromagnetic actuation application.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided an annulus outer diameter that is no less than 100% greater than the inner diameter and a body passage area less than 2.25 time the area of the needle in the device of Tanasawa to control fuel flow volume, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. Claims 20, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieczorek (4,967,959) in view of Daly et al. (4,971,254).

Wieczorek discloses a method comprising:
providing a needle 12;

selecting a body 10 to surround needle 12 and form a body passage (between needle 12 and body 10);
providing a seat 14 with a first surface 18 and a second surface (bottom exterior surface of seat 14);
configuring at least one cut-out 34.

Wieczorek discloses the limitations of the claimed invention with the exception of the swirl generator and the average cross sectional area of the body passage and the cross sectional area of the needle.

Wieczorek discloses a guide member 26 having holes 30 but holes 30 does not provide swirling function. Daley teaches a fuel injector with a guide member 18 having swirl passages 34. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have angled the through passages 30 of Wieczorek as taught by Daley to swirl the fuel to increase divergence (Daley, abstract, lines 9-13).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided an annulus outer diameter that is no less than 100% greater than the inner diameter and a body passage area less than 2.25 time the area of the needle in the device of Tanasawa to control fuel flow volume, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments filed November 26, 2007 have been fully considered but they are not persuasive.

Applicant argues that Tanasawa's cut-out 7 communicates with outlet 3 and no fuel can collect in the volume defined by cutout 7. Applicant's cut-out is readable on Tanasawa's extension of passage 8 below passage 9 and plug 15.

Applicant argues that passage 8 does not communicate with needle 6 and passage 9 does not surround substantially the entire needle 6. Passage 8 communicates with needle 6 via passage 9 and chamber 7. Chamber 7 surrounds substantially the entire needle 360 degrees.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

CK